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Record

May 9, 2003

Volume 27 No. 31

Washington University in St. Louis

Oetting receives 'Search' award

By Barbara Rea

One of the University's most dedicated alumni volunteers, Marie Prange Oetting, was awarded the William Greenleaf Eliot Society "Search" Award at the group's 36th annual dinner April 30 at the Ritz-Carlton, St. Louis.

The Eliot Society's highest honor, the "Search" award is presented each year to an outstanding citizen of the University community.

At the dinner, Eliot Society President Mary Ann Van Lokeren presented Oetting with a silver replica of *The Search*, a sculpture designed by Heikki Seppä, professor emeritus in the School of Art. The original sculpture is now part of the University's permanent art collection.

"Marie Prange Oetting is a tireless supporter and enthusiastic advocate of Washington University and richly deserves this wonderful honor bestowed upon her by the Eliot Society," Chancellor Mark S. Wrighton said.

The native St. Louisan's ties to the University run deep throughout her family. She earned a bachelor's degree in Arts & Sciences in

See **Oetting**, Page 4

JOE ANGELES

Chancellor Mark S. Wrighton and Marie Prange Oetting admire a silver replica of *The Search*, a sculpture designed by Heikki Seppä, professor emeritus in the School of Art, at the 36th annual William Greenleaf Eliot Society dinner April 30. Oetting was given the replica for winning the "Search" award, the society's highest honor.

Quitting smoking?

Genetics might be involved

By Carolyn Jones Otten

School of Medicine researchers have uncovered evidence linking genetic influences to nicotine withdrawal symptoms that commonly occur when a person attempts to stop smoking.

Their findings, published in a recent issue of the journal *Nicotine and Tobacco Research*, also indicate that genetic factors both related and unrelated to nicotine withdrawal may affect attempts to quit smoking.

While genetic influences accounted for 54 percent of failures to quit smoking, about one-third of such influences were attributed to the severity of symptoms of nicotine withdrawal.

"Many people who try to quit smoking restart within a week, and about 90 percent relapse within a year," said Hong Xian, Ph.D., research assistant professor of medicine. "We wanted to learn why these smokers have such a difficult time trying to quit."

Xian's study does not identify specific genes that might be involved in nicotine withdrawal, but it may represent an important step in the development of future smoking-cessation therapies.

Xian, second author Jeffery Scherrer of Saint Louis University's School of Public Health, and other colleagues in the Washington University School of Medicine Department of Psychiatry and at Harvard University have determined that genetic factors are involved in nicotine withdrawal, which someday may allow scientists to target genes associated with the problem, thereby improving a smoker's odds of quitting.

At the same time, the study confirmed that genes don't tell the whole story. Environmental factors also play a significant role in determining a person's success in quitting.

Xian and his colleagues

See **Smoking**, Page 6

> "Just because genes influence failed smoking cessation and nicotine withdrawal, it doesn't mean that we can't influence our own choices. People still have free will and still can stop smoking, even if their genetic makeup might make it very difficult."
>
> Hong Xian

Gravity waves

Signals open 'completely new sense'

By Tony Fitzpatrick

Sometime within the next two years, researchers will detect the first signals of gravity waves — weak blips from the far edges of the universe passing through our bodies every second.

Predicted by Einstein's theory of general relativity, gravity waves are expected to reveal previously unattainable mysteries of the universe.

Wai-Mo Suen, Ph.D., professor of physics in Arts & Sciences, is collaborating with researchers nationwide to develop waveform templates to comprehend the signals to be analyzed. In this manner, researchers will be able to determine what the data represent — a neutron star collapsing, for instance, or black holes colliding.

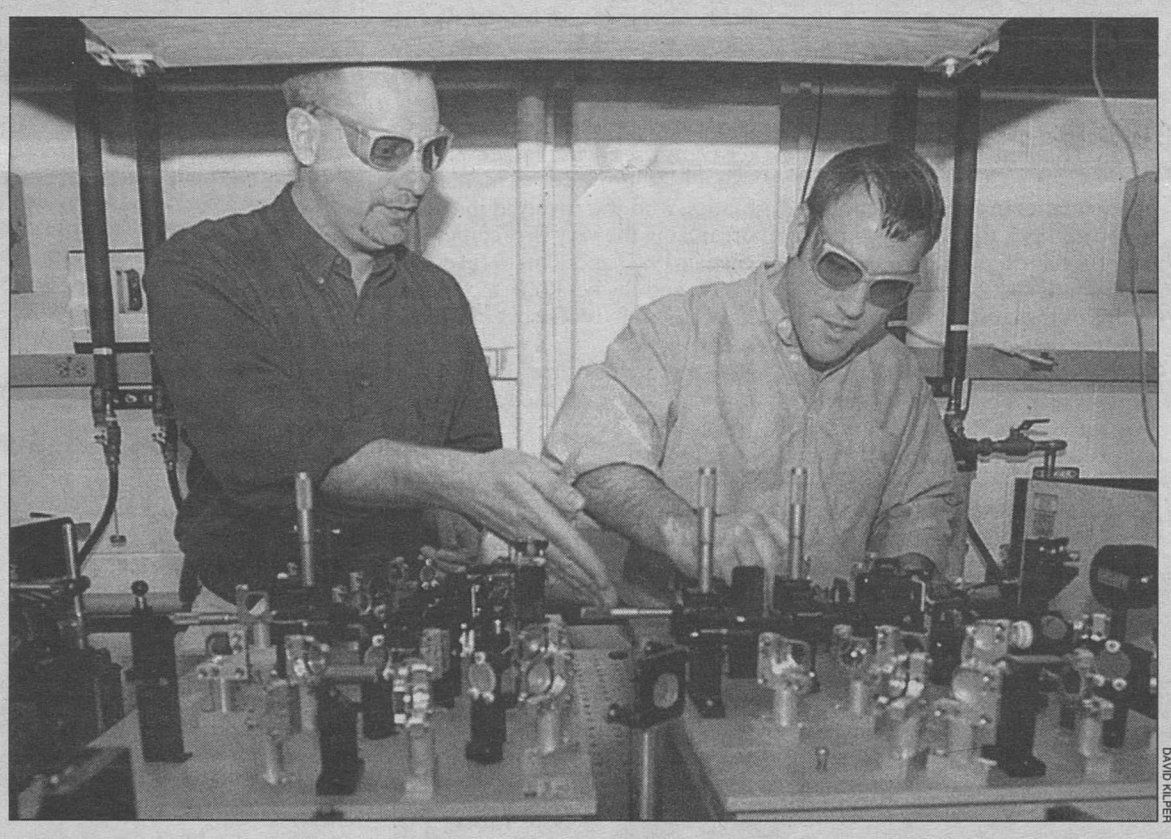
"In the past, whenever we expanded our bandwidth to a different wavelength region of electromagnetic waves, we found a very different universe," Suen said. "But now we have a completely new kind of wave.

"It's like we have been used to experiencing the world with our eyes and ears and now we are opening up a completely new sense."

Suen

Gravity waves will provide information about our universe that is either difficult or impossible to obtain by traditional means. Our present understanding of the cosmos is based on the observations of electromagnetic radiation, which is emitted by individual electrons, atoms or molecules and is easily absorbed, scattered and dispersed.

See **Gravity**, Page 6



DAVID KILPER

Richard Loomis, Ph.D. (left), assistant professor of chemistry in Arts & Sciences, and chemistry graduate student Dave Boucher examine a $600,000 high-powered, femtosecond (one quadrillionth of a second) laser system in Loomis' laboratory. Loomis and his group are attempting to become the first research group to capture a "movie" of two molecules colliding to better understand the dynamics and apply results to new directions in chemistry.

Lights, camera ... collide!

Scientists attempt to create a 'movie' of chemical reactions

By Tony Fitzpatrick

University physical chemist Richard A. Loomis is combining powerful lasers with clever timing schemes to characterize how chemical reactions occur with very precise atomic and time resolution.

Understanding the mechanisms and physics of a chemical reaction at the most fundamental level could provide valuable insights into new directions for the field of chemistry.

Loomis, Ph.D., assistant professor of chemistry in Arts & Sciences, is building on the femtochemistry advances of Ahmed H. Zewail — a 1999 Nobel Prize-winner who observed, in real time, chemical bonds breaking as a molecule falls apart.

Loomis' research group is tackling one of the next major hurdles in chemistry: observing in real time how two molecules collide and form reaction products.

These novel efforts are driven by the hopes of understanding how, as Yeats chronicled in the last century, "Things fall apart," and as Loomis now emphasizes, "Things are made."

Using lasers with extremely short pulse durations and very specific colors, Loomis makes real-time "movies" of molecules forming and then breaking.

"What we're trying to do is find how molecules prefer to come together to form new compounds, and what forces and geometries encourage the breaking of bonds," Loomis said.

"This is a complicated business. We're trying to not only learn the road map — the hills and valleys and winding curves — that molecules follow during a reaction, but also watch these reaction events happen in real time."

As a physical chemist, Loomis' research interests are centered on probing and controlling reaction dynamics with atomic resolution — the most fundamental level.

The experiments in Loomis' laboratory uniquely blend a combination of established molecular beam techniques that allow them to cool reactants to the lowest possible temperatures, about minus-273 degrees Celsius, with sophisticated laser technology. That in turn enables

See **Reactions**, Page 6

Board of Trustees elects three new members

At its May 2 meeting, the University's Board of Trustees elected three new members — **Maxine Clark**, chief executive of Build-A-Bear Workshops; **William B. Neaves**, president and chief executive officer (CEO) of the Stowers Institute for Medical Research in Kansas City, Mo.; and **John D. Weil**, president of the Clayton Management Co.

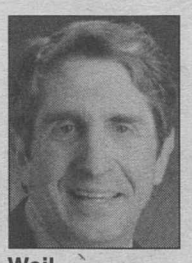
Chancellor Mark S. Wrighton made the announcement.

Re-elected as trustee officers for 2003-04 were Chairman **John F. McDonnell**, retired chairman of the board of McDonnell Douglas Corp.; Vice Chairman **William H. Danforth**, University chancellor emeritus; and Vice Chairman **David W. Kemper**, chairman, president and CEO of Commerce Bancshares Inc.

Re-elected to regular terms on the board were **John P. Dubinsky**, president and CEO of Westmoreland Associates LLC; **David C. Farrell**, former chairman and CEO of the May Department Stores Co.; **Richard F. Ford**, managing general partner of Gateway Associates LP; **Eugene S. Kahn**, chairman of the board and CEO of the May Department Stores Co.; and **Michael M. Sears**, office of the chairman, chief financial officer and senior vice president of The Boeing Co.


Clark


Neaves


Weil

The board also elected four former trustees to new terms: **Robin E. Hernreich**, investor from Vail, Colo.; **Louis G. Hutt Jr.**, managing member of Bennett, Hutt & Co. LLC; **Barbara Schaps Thomas**, senior vice president and chief financial officer of HBO Sports/PPV; and **Ann Rubenstein Tisch**, founder of the Young Women's Leadership School of East Harlem, N.Y.

Andrew B. Craig III, managing director of RiverVest Venture Partners and retired chairman of the board of NationsBank Corp., was elected as an emeritus trustee.

Gordon W. Philpott, M.D., the newly elected chair of the Alumni Board of Governors, will serve his second year as an alumni representative to the Board of Trustees. He is professor emeritus of surgery in the School of Medicine.

The board named student representatives for 2003-04. Announced as undergraduate student representatives were **Ryan Lawson**, School of Art Class of 2004, and **Elizabeth "SiSi" Martí**, Arts & Sciences Class of 2004. Named graduate student representatives were **Xiu Xia Du**, D.Sc. candidate in systems science and mathematics in engineering, Class of 2004; and **David E. Taylor**, D.Sc. candidate in electrical engineering, Class of 2004.

Among his comments to the trustees, Wrighton noted that the Office of Undergraduate

See **Trustees**, Page 5

Midwest Geometry Conference hosted by WUSTL

BY TONY FITZPATRICK

The University will host an international gathering of mathematicians when the Midwest Geometry Conference convenes May 30-June 1.

The conference, which has been held at Midwestern institutions annually since 1991, is sponsored by the National Science Foundation (NSF) and the University.

Registration is free, and participation includes lunches May 31 and June 1 as well as an evening banquet May 31.

The conference will comprise four half-day sessions. On the night of May 31, there will be a panel discussion on future directions and problems in the field.

Presentation topics include three-manifolds, hyperbolic geometry and geometric group theory; geometry, analysis and probability on discrete groups; minimal submanifolds; and surface immersions in space.

While the conference has a Midwestern flair, participants from the Middle East, Italy, Germany, Korea and Brazil will be in attendance. There will be about 50 in all, including graduate students.

"These topics are the current hot ones in geometry, and many of the problems are very old, going back 100 years or more, and very stimulating," said Gary R. Jensen, Ph.D., professor of mathematics in Arts & Sciences.

Since 1995, the NSF has funded these conferences with joint three-year grants that cover about two-thirds of the costs. Jensen wrote the first such joint proposal; Larry Peterson, Ph.D., a mathematician at the University of North Dakota, wrote the current one. Washington University last hosted the conference in June 1995.

"The conference is a valuable networking opportunity, as well as a great venue for dialogue on mathematical concepts and controversies and the direction of mathematics," Jensen said. "The speakers are the leaders of their fields. Keeping it Midwestern allows people in neighboring states to attend inexpensively."

The Washington University conference organization committee comprises: Jensen; Quo-Shin Chi, Ph.D., professor of mathematics, who was involved in organizing the very first conference in 1991; and Renato Feres, Ph.D., and Rachel Roberts, Ph.D., both associate professors of mathematics.

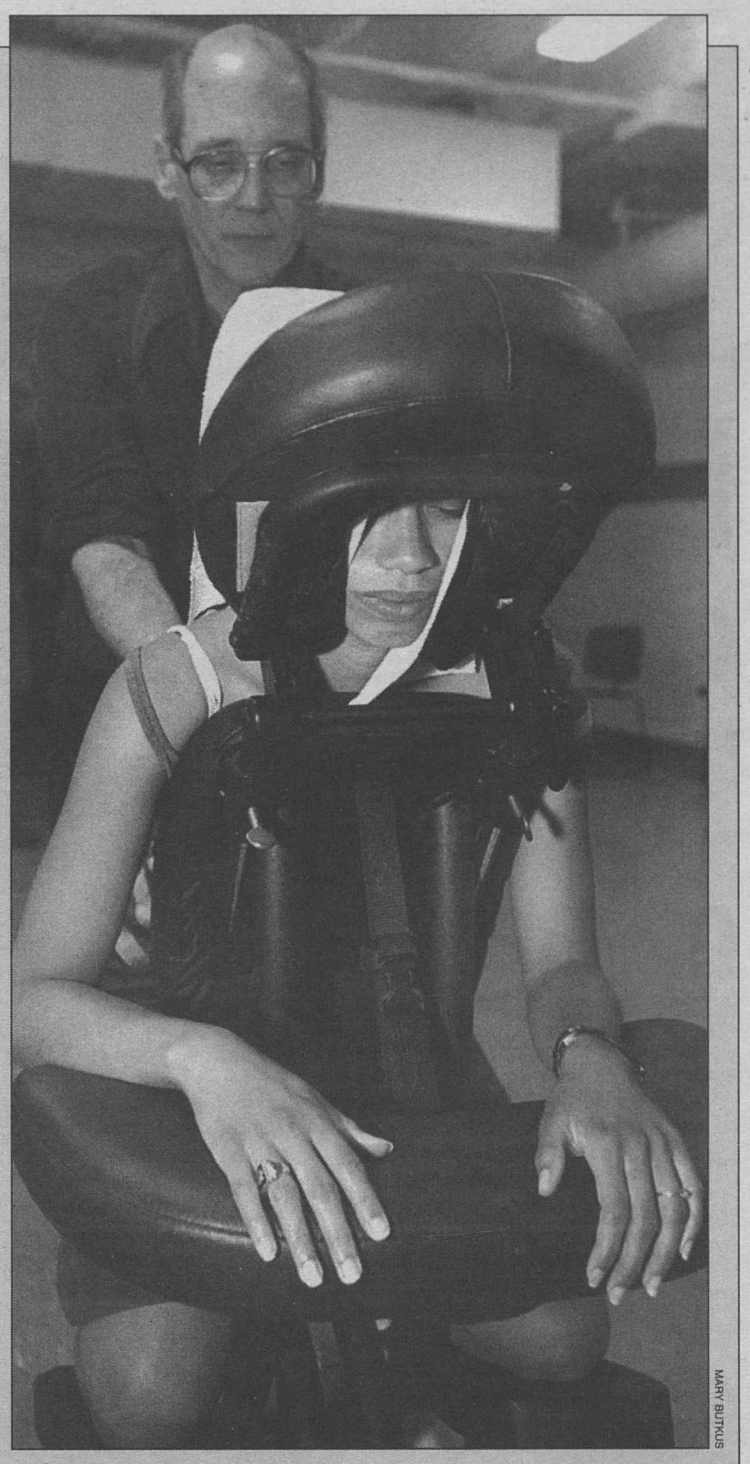
For more information, go online to math.wustl.edu/MGC2003.

PICTURING OUR PAST


HERB WEITMAN

Ella Fitzgerald receives an honorary doctor of fine arts degree at the 1974 Commencement. The University conferred its first honorary degree upon Nathan D. Tirrell in 1859, and the first honorary doctoral degree was conferred upon William Chauvenet in 1870. The University has bestowed 541 honorary degrees over the years, to prominent individuals such as Bob Hope, James Michener, Joseph Pulitzer, Howard Nemerov, Duke Ellington, Charles Lindbergh and Stan Musial. Six more will be conferred at this year's Commencement, to Madeleine K. Albright (who will also deliver the Commencement address), Herman N. Eisen, Douglass C. North, Ozzie Smith, William P. Stiritz and Blanche M. Touhill.

Washington University will be celebrating its 150th anniversary in 2003-04. Special programs and events will be announced as the yearlong observance approaches.


MARY BUTKUS

A little higher ... ooh, right there **Patrick Morris of Patrick Morris Massage works some of the "end of the semester" tension out of senior Paola Rijos during the Stress Free Zone April 29 in The Gargoyle in Mallinckrodt Student Center. The two-day event, co-sponsored by the Office of Student Activities, Health Promotion and Wellness and the South 40 Fitness Center, attracted nearly 100 students who were looking to de-stress and take a break from studying for finals. In addition to massages, healthy snacks, games, movies and arts and crafts were offered.**

Staff Day to offer awards, lunch, activities

BY ANDY CLENDENNEN

The annual break from your daily routine is right around the corner, as the University's Staff Day will be May 19.

The event, in its 28th year, honors personnel for their contributions to the University's success and will kick off at 10:30 a.m. with the Staff Service Award and Recognition Ceremony in Edison Theatre.

Chancellor Mark S. Wrighton will host the program and will be assisted by the University's vice chancellors and deans. The ceremony will honor those with 10, 15, 20, 26 and 30-plus years of service.

Also presented will be the sixth annual Gloria W. White Distinguished Service Award, recognizing a staff member for exceptional effort and contributions that result in the enhancement of the University.

A buffet lunch and social gathering will follow at noon in Bowles Plaza. In case of inclement weather, lunch will be in Mallinckrodt Student Center.

From 1-3 p.m., open activities for staff members include wallyball and racquetball, swimming, running on Bushyhead Track and use of the fitness center in the Athletic Complex. Those preferring something less strenuous can have a caricature drawn or try their luck at bingo, bridge and other table games in Holmes Lounge.

A new event will be offered this year. Tyson Research Center personnel will be offering two tours of the facility: a bird-watching walk and a visit to the abandoned Mincke Hollow mining town and quarry cave. For information on the tours, call Joyce Duncan at 935-8430.

In addition, the following group activities will be available:

- Golf at Forest Park: Call Bev Owens at 935-6482. Golfers will have box lunches at the park before their 12:15 p.m. tee time.
- A Hilltop Campus tour: Call Jim Burmeister at 935-5801.
- A bike ride in Forest Park: Call Bobbe Winters at 935-6231.
- Softball: Call Tom Lauman at 935-5967.
- Volleyball: Call Janine Prost-Domasky at 935-5005.
- WUSTL Walks: Call Betsy Foy at 935-7386.

At 3:30 p.m. in Bowles Plaza, winners of various activities will be presented with trophies or plaques, and there will be drawings for grand prizes. Treats from Ted Drewes will also be available on a first-come, first-served basis during the awards.

"Staff Day is a great way to thank our staff members for their hard work and contributions to the University," said Ann B. Prenatt, executive director of human resources. "A great deal of time and effort is put into the organizing and implementing of the event by the Staff Day Committee and the Office of Human Resources.

"It is always worth it when we see the smiles of those receiving service awards, colleagues enjoying the competitions and just having a fun afternoon."

For more information, call 935-5990.

School of Medicine Update

Cooper named president of thoracic surgery association

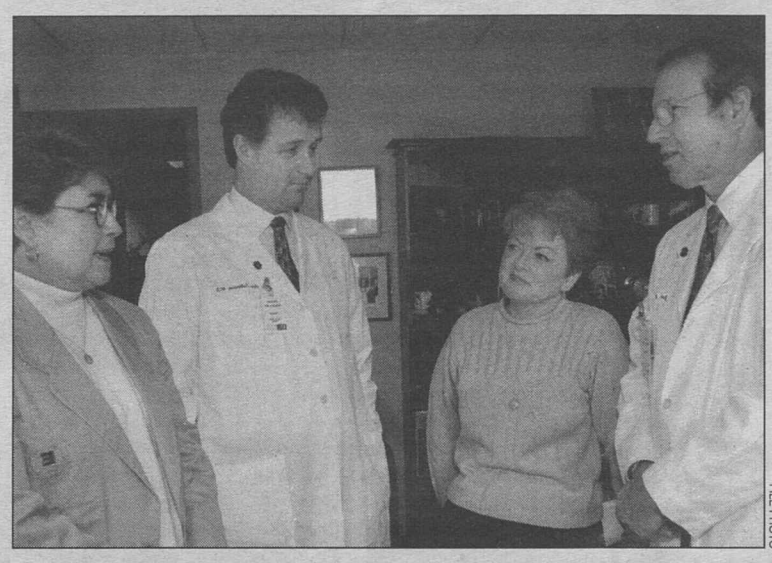
BY GILA Z. RECKESS

Joel D. Cooper, M.D., the Evarts A. Graham Professor of Surgery and chief of the Division of Cardiothoracic Surgery, was recently elected the 85th president of the American Association for Thoracic Surgery.

Cooper, an internationally recognized pioneer in lung surgery, led the team that conducted the first successful human lung transplant in 1983. He also pioneered efforts to develop both lung transplant surgery and lung-volume reduction surgery.

"Dr. Cooper has long been recognized as a leader in the field of thoracic surgery," said Tirone E. David, M.D., secretary of the association. "His election to the presidency is an acknowledgement of his accomplishments and is the highest honor for a thoracic surgeon."

The association is the nation's oldest and foremost cardiothoracic surgery professional organization, with more than 1,000 members representing the leadership of academic and clinical thoracic surgery practice worldwide. Consisting primarily of academic physician-scientists, the association facilitates educational and research opportunities in heart and chest surgery.



FILE PHOTO

Double-lung transplant recipients Ann Harrison (far left) and Doris Mathews reunite with their surgeons, Joel D. Cooper, M.D. (far right), and G. Alexander Patterson, M.D., the Joseph C. Bancroft Professor of Surgery. The women, who suffered from emphysema, received the world's first double-lung transplants 17 years ago.

Cooper is the fourth faculty member from the School of Medicine to be elected president of the association. The first three were Graham, M.D., former Bixby Professor of Surgery and head of the Department of Surgery (1927); Tom Burford, M.D., former head of cardiothoracic surgery (1970); and Thomas B. Ferguson, M.D., professor emeritus of surgery (1981).

"This is a fantastic honor and I'm very flattered to receive such recognition from my colleagues," Cooper said. "It is humbling to review the names of the distinguished surgeons who have preceded me in this office. I hope to use the opportunity wisely."

As president, Cooper plans to address the atmosphere of discouragement that currently pervades much of surgical practice. In particular, he wants to highlight the need to attract new physicians into surgery and cardiothoracic specialties.

"It's a very difficult time for this specialty right now," he explained. "Surgery is an extremely demanding field, and people are less willing to make the sacrifices required during training and, ultimately, surgical practice, particularly since there is increased interference from third-party payers and both financial remuneration and the esteem of the public continue to decline.

"As president, I want to acknowledge these problems, but focus on the incredible opportunities we have today and how really exciting and rewarding it is to be a surgeon."

Cooper would like to work with Medicare and the National Institutes of Health to improve the current process by which medical and surgical procedures are approved and covered by insurance.

Cooper earned a bachelor's degree from Harvard College in 1960 and a medical degree from Harvard Medical School in 1964. He joined the University in 1988 after serving on the faculty at the University of Toronto for 16 years.

His research has led to significant advances in the surgical treatment of lung disease. For example, he developed lung-volume reduction surgery, in which surgeons remove sections of lung damaged by emphysema.

Among other projects, Cooper is investigating the use of airway stents to treat emphysema.

In addition to authoring more than 350 scientific publications, Cooper has received several international honors and awards, including the Jacobson Innovation Award from the American College of Surgeons and an honorary doctorate from Bar Ilan University.

He also is an honorary member of the Society of Cardiothoracic Surgeons of Great Britain and Ireland, an honorary fellow of the Royal College of Surgeons of Edinburgh and an honorary fellow of the Russian Academy of Science.

Obesity problems best treated with long-term approach

BY JIM DRYDEN

It's time to get ready for swimsuit season — a reality few adults like. But people with medically significant obesity have more important reasons to lose weight than simply looking good in warm-weather clothes.

At the University's Weight Management Program, patients receive assistance from a team of doctors, behavior therapists, registered dietitians and exercise specialists who tailor weight management and exercise programs to help patients lose weight and adopt healthier lifestyles.

> "More than one of every three Americans has medically significant obesity. … The problem has become a major public-health crisis."

SAMUEL KLEIN

The center's new director, Denise Wilfley, Ph.D., associate professor of psychiatry, is an expert in behavior therapy for obesity.

She is joined by Robinson Welch, Ph.D., the new behavior therapy director. They join Samuel Klein, M.D., and J. Christopher Eagon, M.D., the center's medical and surgical directors.

"For many people who are significantly overweight, the problem is primarily behavioral," Wilfley said. "We try to identify the barriers that prevent people from being more active and eating fewer calories and adopting a healthier lifestyle. Unless we can help people make long-term changes in behavior, we can't help them.

Obesity is a very serious problem that seems to be getting worse in our society, but with the right treatment, it is possible even for very obese people to lose weight and get healthier."

Medically significant obesity means having a body weight that is more than 20 percent above normal. The reason it is called medically significant obesity is that weighing that much puts people at risk for cancer, diabetes, stroke, heart disease and high blood pressure. It also decreases quality of life.

Almost two-thirds of Americans are either overweight or obese, and that figure is growing — in both size and number.

"More than one of every three Americans has medically significant obesity," said Klein, the Danforth Professor of Medicine and Nutritional Sciences and director of the University's Center for Human Nutrition. "In the past several years, the prevalence of obesity in adults in the United States has continued to increase, in spite of more and more research about the dangers of being overweight. The obesity problem has become a major public-health crisis."

The University's program is an outpatient program that uses the most current information to help patients lose weight safely. It also reduces long-term risks of obesity-related diseases by providing group classes, medical monitoring and nutrition and exercise education seminars. Individual counseling sessions and long-term maintenance are also included.

Patients in the program are taught how to lose weight and how to maintain their weight loss. The program sets modest, realistic goals for patients because research has shown that even moderate weight loss of 5 percent to 10 percent can result in considerable health benefits for those with medically significant obesity.

Many who lose weight tend to regain those pounds over time. Physical activity is particularly important in sustaining weight loss, so even participants who are extremely overweight are required to moderately exercise.

For those who have great difficulty losing weight in spite of that assistance, the program also offers surgical alternatives. These include minimally invasive, laparoscopic gastric bypass surgery to patients who are very obese, especially those who have developed medical complications from obesity.

According to Klein, it makes little sense to treat obesity with a program that ends after only a few weeks or months; a long-term program is critical for long-term success.

"Obesity is a chronic disease, and giving short-term therapy is not going to be effective," Klein said. "We would never think of treating a diabetic with insulin for four months and then stopping the therapy. We need to treat obesity in the same way."

To learn more about the Weight Management Program, call 286-2080.

O'Leary neuroscience prizes announced

The departments of Neurology and Neurological Surgery recently named the winners of the 26th Annual James L. O'Leary Prizes for Outstanding Research in Neuroscience.

Terrance Kummer (from the lab of Josh Sanes, professor of anatomy and neurobiology) won the graduate student category for a presentation titled "Advanced Postsynaptic Differentiation Without Innervation at the Neuromuscular Synapse."

Belen Hurle, Ph.D., (from the lab of David Ornitz, M.D., Ph.D., professor of molecular biology and pharmacology) won the postdoctoral category for a presentation titled "Non-syndromic Vestibular Disorder with Otoconial Agenesis in Tilted/Mergulhador Mice Caused by Mutations in Otopetrin 1."

The prizes will be presented at the 48th George H. Bishop Lecture in Experimental Neurology at 4 p.m. May 28 in Erlanger Auditorium in the Bernard Becker Medical Library.

The lecture will be given by William C. Mobley, M.D., Ph.D., professor and chair of the Department of Neurology and Neurological Sciences at Stanford University School of Medicine.

For more information, call 362-9730.

BOB BOSTON

Distinguished honors (From left) Harvey A. and Dorismae Friedman chat with John C. Morris, M.D., director of the Center for Aging, at the third annual Friedman Lecture and Center for Aging Update May 6 in Anheuser-Busch Hall. Chancellor Mark S. Wrighton presented the three with medallions in recognition of the Friedmans' recent endowment of the Harvey A. and Dorismae Friedman Distinguished Professor of Neurology, which Morris holds. The Friedmans also recently funded the new Friedman Award — given to non-physicians who have made "outstanding contributions to patient-oriented research on aging" — presented this year to Mary A. Coats, research instructor in neurology.

University Events

Play It Safe • Diabetes Research

"University Events" lists a portion of the activities taking place at Washington University May 9-29. Visit the Web for expanded calendars for the Hilltop Campus (wustl.edu/calendar) and the School of Medicine (medschool.wustl.edu/calendars.html).

Exhibitions

Bachelor of Fine Arts Student Exhibition. Continues through May 16. Gallery of Art. 935-4523.

Lectures

Friday, May 9

9:15 a.m. Pediatric Grand Rounds. "Understanding Human Neuronal Migration Defects by Modeling in the Mouse." Anthony J. Wynshaw-Boris, assoc. prof. of pediatrics & medicine, U. of Calif., San Diego, Medical School. Clopton Aud. 4950 Children's Place. 454-6006.

Noon. Cell Biology & Physiology Seminar. "Molecular Membrane Fusion Machinery: Specificity and Regulation." Thomas Sollner, asst. prof. of cellular biochemistry & biophysics, Memorial Sloan-Kettering Cancer Center, New York. McDonnell Medical Sciences Bldg., Rm. 426. 747-4233.

Monday, May 12

Noon. Molecular Biology & Pharmacology Seminar. "Tissue-specific Use of an Upstream Cleavage Site Within the Prodomain Regulates BMP-4 Activity and Signaling Range During Mammalian Development." Jan Christian, assoc. prof. of cell & developmental biology, Ore. Health & Science U. South Bldg., Rm. 3907, Philip Needleman Library. 362-0183.

Noon. Neurology & Neurological Surgery Research Seminar Series. "The Role of Zinc Toxicity in Neurodegeneration and Diabetes." Christian Sheline, research asst. prof. of neurology. Maternity Bldg., Schwarz Aud. 362-7316.

4 p.m. Immunology Research Seminar Series. "The 3 E's of Cancer Immunoediting." Robert D. Schreiber, Alumni Professor of pathology & immunology. Eric P. Newman Education Center. 362-2763.

5 p.m. Siteman Cancer Center Oncologic Imaging Seminar Series. "MRI Assessment of Tumor Microvascular Permeability and Angiogenesis." Robert Brasch, prof. of radiology and pediatrics and dir., Center for Pharmaceutical & Molecular Imaging, U. of Calif., San Francisco. Center for Advanced Medicine, Farrell Conference Rm. 1. 454-8566.

Tuesday, May 13

Noon. Molecular Microbiology & Microbial Pathogenesis Seminar Series. "Influenza A Virus Replication and Pathogenesis." Andrew Pekosz, asst. prof. of molecular microbiology. Co-sponsored by the Whitaker Young Investigator Program. Cori Aud., 4565 McKinley Ave. 362-1514.

4 p.m. Anesthesiology Research Seminar. Shanelle Ko, graduate research asst. in anesthesiology. Clinical Sciences Research Bldg., Rm. 5550. 362-8560.

4 p.m. Siteman Cancer Center Genetics Seminar Series. Steven B. Scholnick, assoc. prof. of otolaryngology. McDonnell Medical Sciences Bldg., Rm. 426. 454-8566.

Wednesday, May 14

4 p.m. Biochemistry & Molecular Biophysics Seminar. "Radicals and Reactive Oxygen Species (ROS) and Their Effects in Biological Systems: Can Fluorescence Quantify Them?" Robert M. Clegg, prof. of physics, U. of Ill. Cori Aud., 4565 McKinley Ave. 362-0261.

Thursday, May 15

Noon. Genetics Seminar Series. "Genomic Events in Breast Cancer Evolution." Joe W. Gray, prof. of laboratory medicine and radiation oncology, U. of Calif., San Francisco, Comprehensive Cancer Center. McDonnell Medical Sciences Bldg., Rm. 823. 362-2139.

Friday, May 16

8 a.m. Radiation Oncology Lecture. James A. Purdy Medical Physics Lecture. "Image Guided Radiation Therapy: Present Methods and Future Challenges." John W. Wong, dir. of clinical physics, dept. of radiation oncology, William Beaumont Hospital, Royal Oak, Mich. Barnes-Jewish Hosp. Bldg., Steinberg Aud. 362-2866.

5:30 p.m. CME Nuclear Cardiology Course. "Images to Outcomes III: Nuclear Cardiology Update." (Continues through May 18, 11:30 a.m.) Cost: $200 for physicians, $100 for allied health professionals. Tan-Tar-A Resort, Lake of the Ozarks, Mo. To register: 362-6891.

Monday, May 19

Noon. Molecular Biology & Pharmacology Seminar. "Regulation of Bone Metastases by Osteoclast Activation." Katherine Weilbacher, asst. prof. of medicine. South Bldg., Rm. 3907, Philip Needleman Library. 362-0183.

Noon. Neurology & Neurological Surgery Research Seminar. "Exploring the Link Between Cholesterol Metabolism and Alzheimer's Disease." Anne Fagan Niven, research assoc. prof. of neurology. Maternity Bldg., Schwarz Aud. 362-7316.

4 p.m. Biology Seminar. "Hox Protein Mutations and Macroevolutionary Change." William McGinnis, prof. of biology, U. of Calif., San Diego. Rebstock Hall, Rm. 322. 935-4467.

4 p.m. Immunology Research Program Seminar Series. "T Cells, Their Readings of a Strange World." Philippa Marrack, investigator, National Jewish Medical and Research Center, Denver. Eric P. Newman Education Center. 362-2763.

Tuesday, May 20

4 p.m. Anesthesiology Research Seminar. Zhe Zhang, research assoc. in anesthesiology. Clinical Sciences Research Bldg., Rm. 5550. 362-8560.

5:30 p.m. Laser Vision Correction Seminar Series. "Understanding LASIK" and "Am I a Candidate?" Michael S. Conners, medical dir., Refractive Surgery Center. Center for Advance Medicine, Third Floor Conf. Room. 747-8036.

Wednesday, May 21

4 p.m. Biochemistry & Molecular Biophysics Seminar. "Dynamic Control in Allosteric Regulation." Tom Alber, prof. of molecular and cell biology, U. of Calif., Berkeley. Cori Aud. 4565 McKinley Ave. 362-0261.

5:30-9 p.m. Center for the Application of Information Technology Meeting. "Board Dinner Dialogue." Open to CAIT members only. Whittemore House. 935-4792.

Thursday, May 22

Noon. Genetics Seminar Series. Annual Donald C. Shreffler Memorial Lecture. "Mammalian Left-right Development: Cilia Are at the Heart of the Matter." Martina Brueckner, assoc. prof. of pediatrics, Yale U. McDonnell Medical Sciences Bldg., Rm. 823. 362-2139.

Friday, May 23

Noon. Cell Biology Physiology Seminar. "HIV Fusion and Microphages." Lee Ratner, prof. of internal medicine and of molecular microbiology. McDonnell Medical Sciences Bldg., Rm. 426. 747-4233.

4 p.m. Anatomy & Neurobiology Seminar. Dora Angelaki, prof. of anatomy & neurobiology. McDonnell Medical Sciences Bldg., Rm. 928. 362-7043.

Tuesday, May 27

4 p.m. Anesthesiology Research Seminar. Joe Henry Steinbach, dir., anesthesiology research unit. Clinical Sciences Research Bldg., Rm. 5550. 362-8560.

Wednesday, May 28

2 p.m. Diabetes Research and Training Center Lecture. Annual Julio V. Santiago, M.D. Memorial Lecture in Diabetes. "Beyond Intensive Insulin Therapy." Jay S. Skyler, prof. of medicine, U. of Miami. Cori Aud., 4565 McKinley Ave. 362-8680.

Thursday, May 29

4 p.m. Ophthalmology & Visual Sciences Seminar Series. "Genetic Analysis of Retinal Organization in the Zebrafish: Insights Into Development and Disease." Brian Link, asst. prof. of biology, neurobiology and anatomy, Medical College of Wisc., Milwaukee. Maternity Bldg., Rm. 725. 362-1006.

On Stage

Friday, May 9

8 p.m. Performing Arts Department Performance. *The Woods* by David Mamet. Annamaria Pileggi, dir. (Also 5 & 9 p.m. May 10 and 2 p.m. May 11.) Cost: $12, $8 for students, seniors and WUSTL faculty and staff. Tickets available through the Edison Theatre Box Office. Mallinckrodt Student Center, A.E. Hotchner Studio Theatre. 935-6543.

And more...

Monday, May 19

1-3 p.m. Wellness Connection Information Table. "Play It Safe." Mallinckrodt Student Center. 935-5990.

MARY BUTKUS

Turning the ordinary into the extraordinary Sophomores Banji Iyun (foreground) and Katherine Karr work on the "World Music Mural" May 3 in the parking lot of the Casa Loma Ballroom in St. Louis. The 125-foot-long mural was designed and created by 28 Hispanic teens who comprise the Southside Tutoring/Mentoring Program's youth group, with support from 27 volunteer tutors from the University coordinated by Virginia Braxs, Spanish lecturer in Romance languages and literatures in Arts & Sciences. Eric Repice, graduate student in anthropology in Arts & Sciences, was one of the lead artists on the project, which was officially unveiled May 4 during a Cinco de Mayo celebration.

Commencement Week

For more information, check the Commencement Web site, commencement.wustl.edu, or call the Commencement Office at 935-5985.

Wednesday, May 14

6 p.m. Black Senior Alliance Graduation Ceremony at the Chase Park Plaza hotel.

7:30 p.m. University College Recognition Ceremony and Reception in Simon Hall auditorium and courtyard.

Thursday, May 15

10:30 a.m. Eliot Honors Convocation. Honoring students for academic and leadership achievements. Athletic Complex, Field House.

1:30 p.m. School of Engineering & Applied Science Recognition Ceremony in Athletic Complex, Field House.

4:30 p.m. College of Arts & Sciences Recognition Ceremony in Athletic Complex, Field House.

8 p.m. School of Art Recognition Ceremony in Graham Chapel.

Friday, May 16

8 a.m. Degree candidates assemble.

8:30 a.m. Commencement Exercises in Brookings Quadrangle.

The following programs begin immediately after the Commencement Exercises:

College of Arts & Sciences: Reception and diploma distribution in the Sally E. Strain Courtyard, between Monsanto Laboratory and the Psychology Building. Rain location: Athletic Complex, Francis Gym.

University College in Arts & Sciences: Diploma distribution and reception in Women's Building Lounge.

Graduate School of Arts & Sciences: Hooding and recognition ceremony in Edison Theatre. Reception follows in the Mallinckrodt Student Center, Lower Lvl., Gallery and The Gargoyle.

School of Architecture: Diploma ceremony, Brookings Drive Mall. Reception follows. Rain location and time: diploma ceremony in Graham Chapel, 3 p.m.; reception following in Givens Hall.

School of Art: Diploma distribution and reception on the Steinberg Hall terrace. Rain location: Steinberg Hall, Gallery of Art.

Olin School of Business: Undergraduate diploma distribution and reception in the Athletic Complex, Field House. Reception follows in Simon Hall.

School of Engineering & Applied Science: Undergraduate diploma distribution in Lopata Hall, Room 324. Reception follows in Lopata Gallery and Lopata Plaza, between Jolley and Cupples II halls.

George Warren Brown School of Social Work: Diploma ceremony in Graham Chapel. Reception follows in the Lucy and Stanley Lopata Courtyard, Goldfarb Hall.

Program in Occupational Therapy: Reception in Ridgley Hall, Holmes Lounge. Diploma ceremony follows in Graham Chapel.

The following programs begin at 12:30 p.m.:

Health Administration Program: Diploma ceremony at the Sheraton Clayton Plaza Hotel, Grand Ballroom. Reception immediately following.

School of Law: Diploma ceremony in Brookings Quadrangle. Reception follows in Anheuser-Busch Hall. Rain location: Athletic Complex, Recreational Gymnasium.

The following program begins at 2 p.m.:

Henry Edwin Sever Graduate School of Engineering & Applied Science: Hooding and recognition ceremony in Edison Theatre. Reception follows at Mallinckrodt Student Center, Bowles Plaza. Rain location: Gallery and The Gargoyle, Mallinckrodt Student Center, Lower Lvl.

The following programs begin at 3 p.m.:

Olin School of Business: Graduate diploma and awards ceremony in the Athletic Complex, Field House. Reception follows in Simon Hall.

School of Medicine: Commencement recognition ceremony in the Pavilion Ballroom, St. Louis Marriott Pavilion Hotel. Reception follows in the Hawthorne Ballroom, St. Louis Marriott Pavilion Hotel.

Oetting

Awarded Eliot Society's 'Search' award April 30

– from Page 1

1949; her late husband, William, graduated from the School of Business in 1947 and the School of Law in 1949; and their younger son was one of the first graduates in computer science from the School of Engineering & Applied Science in 1976.

Her devotion runs deep as well, and her advocacy, support and volunteerism for her alma mater is second to none.

She is fully committed to the University's scholarship program, which she and her late husband began supporting many years ago. She recently endowed a scholarship in their names, and she has convinced many others to join her as scholarship sponsors.

As chair of the Arts & Sciences Eliot Society Committee and the Alumni Board of Governors, as an alumni representative to the Board of Trustees, and as a member of the Endowed Scholarship Committee, Oetting has contributed greatly to the role of alumni in building an even stronger University. As a member of the Student Life Task Force and the Arts & Sciences Dean's Advisory Board, she has provided valuable input as a representative of the alumni body.

In recognition of her years of volunteer leadership and outstanding service to the University, Oetting received the Distinguished Alumni Award in 1994. She was also honored by Arts & Sciences with its Distinguished Alumni Award in 2001.

Among her other roles, her work in guiding the undergraduate reunions is what makes her one of the University's most visible alumni volunteers. Together with John R. Barsanti, Oetting has co-chaired their class's five-year reunions from the fifth to the 50th, the latter in 1999. For nearly two decades, she has served as overall chair of undergraduate class reunions, a challenging and critical job that allows her to share her expertise with members of other classes.

The Eliot Society, named after the University's co-founder, was founded in 1959. Its 3,800 members are alumni, parents and friends who provide unrestricted support to the University.

Sports

Men's tennis team heads to quarterfinals

The No. 11 men's tennis team advanced to the national quarterfinals for the second time in school history by defeating No. 15 Kenyon College, 5-0, May 4 in the NCAA Tournament second round, at the Vetta Sports Club. WUSTL will now have a week off before traveling to the quarterfinals, May 14-16, at Gustavus Adolphus College in St. Peter, Minn. Washington U. (14-5) took the early lead by taking all three doubles matches to claim the doubles point. Freshmen Neil Kenner and Ari Rosenthal improved to 17-2 as they rolled in No. 1 doubles, 8-4. In singles, the Bears won all four matches that were completed.

Other updates

The **baseball team** wrapped up another successful campaign as the Bears went 3-3 last week to finish the regular season 23-16. WUSTL swept a doubleheader from Webster University, 5-2 and 10-4, April 29 before Greenville College turned the trick on the Bears, winning 12-1 and 1-0 May 2. The Bears then closed it out by splitting a doubleheader with the University of Dallas on May 3.

The **women's tennis** team saw its 2002-03 season come to and end as the Bears (17-5) were knocked out of the NCAA Tournament with a 6-3 loss at DePauw University in the second round May 3 in Greencastle, Ind. WUSTL, ranked ninth and making its fourth straight tournament appearance, rolled past Denison University, 7-2, in the first round May 3 to set up a battle with No. 6 DePauw.

The No. 17 **softball** team concluded the regular season with a split against Webster University May 3 at the WUSTL Softball Field. The Bears dropped Game 1, 1-0, then won the finale, 3-1. Sophomore Victoria Ramsey picked up the loss in the opener as she fell to 13-4 on the season. The teams managed just five hits total in game one, but a costly error in the top of the fourth hurt the Bears. The Bears loaded the bases in the first and the third innings but could not muster a run. WUSTL left 12 runners on base. Senior Liz Smith pitched a complete game shutout in game two as the Bears won their 30th game. Smith was terrific in her final home game as she allowed three hits and one unearned run. Sophomore Liz Swary provided all the offense for the Bears as she had all three RBIs. The game marked the last home game for three seniors: Smith, Kristen Harrer and Elissa Beckman. The group began the softball program at Washington U. in 2000 and compiled an overall record of 98-58 in four seasons, including one UAA title in 2000 and an NCAA Tournament appearance in 2002.

Softball team makes NCAA tourney

The 17th-ranked softball team will make its second consecutive appearance in the NCAA Tournament as the Bears earned an at-large bid to the tournament. The Bears will play in the five-team Central Regional May 9-11 at Illinois Wesleyan University. The Bears are the No. 3 seed and will take on the University of Chicago, the No. 2 seed, in today's first round. No. 4 Fontbonne University plays No. 5 University of Wisconsin-Whitewater in the opening game, with the winner taking on top-seeded Illinois Wesleyan.

MARY BUTKUS

Copy cat Rohn Beardsley of Copying Concepts discusses his company's products and services with Arts & Sciences staff member Judy O'Leary, office manager for the Department of English, at the Preferred Supplier/Supplier Diversity Fair May 1 at the Athletic Complex. The fair represented an opportunity for departmental personnel and others involved in purchasing decisions to meet and interact with a number of the University's preferred contract suppliers. This year, approximately 45 suppliers were on hand.

New E.M.B.A. program meets once a month

BY ROBERT BATTERSON

A new residential executive master of business administration (E.M.B.A.) degree program is beginning in September at the Olin School of Business.

Classes will meet just once a month from 8:30 a.m.-5:30 p.m. on a Thursday, Friday and Saturday at the Charles F. Knight Executive Education Center.

The program grants a master of business administration degree in only 18 months.

This E.M.B.A. program is geared to executives with seven or more years of managerial-level experience. The program also includes two one-week on-campus residencies and a strong international component with a required two-week overseas residency and an optional London summer program.

"The new Washington University E.M.B.A. program design reflects the needs of busy managers with significant responsibilities — senior, seasoned executives from a diverse group of industries," said Doris Drewry, the Olin School's director of E.M.B.A. admissions. "A Washington University M.B.A. offers experienced executives the kind of rigorous and challenging academic program they expect and outstanding professional and personal development opportunities."

Executives beginning the program in September will complete their M.B.A. in early 2005. The total program cost, including overnight lodging and meals at the Knight Center, is $84,500.

New courses in the E.M.B.A. program curriculum include a "Senior Executives Forum" and "Leading the Responsible Organization."

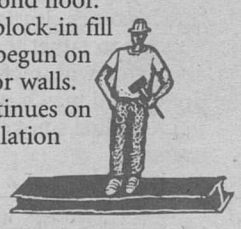
For more information, call the Olin School's E.M.B.A. admissions office at 935-4572.

Construction Update

Construction Update is published periodically and provides information about the progress of major University building and renovation projects on the Hilltop, Medical and West campuses. Information is provided to the *Record* by facilities management.

Earth and Planetary Sciences Building

Concrete work has been completed, and mechanical, electrical and plumbing rough-in work has begun on the second floor. Masonry block-in fill work has begun on the exterior walls. Work continues on stair installation inside the building.



276 N. Skinker Building

This project is moving into the finishing stage. The first-floor level will be finished as the University finds tenants for that level. The move into the upper levels is scheduled for mid-June.

Olin Library

The northeast quadrant of Level 1 is occupied and finish work is taking place throughout Level 2. Building systems are operating. Exterior work will be done this summer.

Phase III Housing

Roof trusses, metal deck and plywood have been completed and shingle and roof installation are well under way. Masonry work has begun on the south and east elevations. Interior framing is near completion. Mechanical, electrical, plumbing and fire-sprinkler system rough-ins are complete through the second floor and continue in the rest of the building. Finish work has begun in the lower level.

Employment

Go online to **hr.wustl.edu** (Hilltop Campus) or **medicine.wustl.edu/wumshr** (Medical Campus) to obtain complete job descriptions.

Hilltop Campus

For the most current listing of Hilltop Campus position openings and the Hilltop Campus application process, go online to hr.wustl.edu. For more information, call 935-5906 to reach the Human Resources Employment Office at West Campus.

Senior Medical Sciences Writer 010108

General Lab Asst. Part Time 020237

Physical Therapist 030064

Registered Nurse 030079

Health Services Physician 030099

Reference & Government Publications Librarian 030116

Zone Manager 030137

Study Coord. 030172

Career Development Specialist 030187

Assoc. General Counsel 030198

Assoc. Dir. of Capital Projects 030203

Accounts Payable Coord. 030212

Treasury Analyst 030215

Deputized Police Officer 030217

Research Technician 030219

Assoc. Dir. J.B. Ervin Scholars Program 030220

Accountant IV 030221

Dir., Student Health & Counseling Service 030222

Asst./Assoc. Dean for Graduate Programs 030227

Hazardous Materials Tech II 030233

Assoc. Dir. of Corporate and Foundation Relations 030235

Operations Manager 030239

Department Secretary 030242

Asst. Football Coach 030249

Regional Director of Development 030252

Medical Campus

This is a partial list of positions in the School of Medicine. Employees: Contact the medical school's Office of Human Resources at 362-7196. External candidates: Submit résumés to the Office of Human Resources, 4480 Clayton Ave., Campus Box 8002, St. Louis, MO 63110, or call 362-7196.

Patient Billing Services Rep. I 031293

Clinical Nurse Coord. 031394

RN Staff Nurse 031397

Clinical Nurse Coord. 031343

Dialysis Technician I 031373

Clinical Nurse Coord. 031380

Sr. Clinical Lab Technologist 031394

Administrative Coord. 031398

Response Officer 031402

Sr. Data Control Coord. 031405

Sr. Data Control Coord. 031406

Medical Asst. II 031407

Medical Secretary II 031410

Research Technician I 031411

Hazards Materials Technician 031412

Animal Care Technician I 031413

RN-Research Patient Coord. 031419

Professional Rater 031423

Data Entry Operator 031425

Insurance, Billing And Collection Asst. II 031429

Reimbursement Supervisor 031438

Accounting Payroll Purchasing Asst. II 031445

Insurance Billing and Collection Asst. II 031447

Animal Care Technician II 031449

Trustees

Medical school's Peck, Stahl give presentations

– from Page 2

Admissions has received more than 20,000 applications, with acceptances continuing to come in at an excellent rate. He also noted that the quality of the freshman class is expected to be perhaps the finest in the University's history.

The chancellor reported on the University's response to SARS, including advisories for Commencement, summer classes, and planning that will respond to any contingencies that may still exist for the fall semester.

In addition, he reviewed the faculty achievement awards, of which professors Lee Epstein and Eugene M. Johnson Jr. were announced as winners at the Chancellor's Gala April 12. Epstein, Ph.D., is the Edward Mallinckrodt Distinguished University Professor of Political Science in Arts & Sciences and professor of law in the School of Law. Johnson, Ph.D., is the Norman J. Stupp Professor of Neurology and professor of molecular biology and pharmacology and co-director of the Alzheimer's Disease Research Center in the School of Medicine.

Wrighton also noted that MetroLink construction is expected to impact the northern perimeter of the Hilltop Campus for the next two years, beginning May 4 and continuing through 2005.

In closing his remarks, he reviewed the planning for the University's sesquicentennial celebration that begins during Founders Week, Sept. 14-20.

Presentations to the board were made by William A. Peck, M.D., executive vice chancellor for medical affairs and dean of the School of Medicine, and Philip D. Stahl, Ph.D., the Edward Mallinckrodt Jr. Professor and head of the Department of Cell Biology and Physiology, regarding the plans for a Medical School Learning and Teaching Center.

Immediately following their remarks, Charles Lipton, chair of the Washington University Public Relations Council, gave a report on the University's image and reputation efforts over the last two decades.

The trustees also heard reports from the following committees: audit, compensation, development, educational policy, honorary degrees, Hilltop finance, medical finance, research-graduate affairs, undergraduate life, and the Alumni Board of Governors.

Reviews of the year were presented by the undergraduate student representatives, the graduate student representatives, and by the faculty representative.

Prior to the meeting, the trustees attended a special presentation on research advances in the treatment of Alzheimer's disease, given by David M. Holtzman, M.D., the Charlotte and Paul Hagemann Professor of Neurology in the School of Medicine.

Randy L. Buckner, Ph.D., gave a presentation on the images of memory in aging and disease. Buckner is associate professor of psychology in Arts & Sciences, of radiology and of neurology in the medical school, and an assistant investigator of the Howard Hughes Medical Institute.

Reactions

Understanding mechanisms may provide valuable insight
– from Page 1

them to initiate the reactions with specific energies and preferred orientations at well-defined times.

Simply irresistible

At the low temperatures achieved in the experiments, two molecules find each other irresistible and are drawn together by weak non-chemical forces. However, as they approach each other, they don't have enough energy to react.

"They end up hanging out near each other, forming a small cluster solely comprised of the two reactants," Loomis said. "We trap them in a cluster prior to reaction.

"This cluster serves as a launching pad from which a laser can be used to excite the molecules at a well-defined time to specific energies and geometries and thus turn the reaction on."

By using multiple lasers, Loomis and his group can not only precisely start the reactions but also monitor the decay of the reactants or the formation of the products using a second laser set to appropriate spectroscopic transitions.

At a given delay in time between the first and second laser, a snapshot of the populations of the reactants and products, as well as the relative orientations between the atoms involved in the reaction, can be recorded at that instant along the reaction pathway.

By recording numerous snapshots at incrementally increasing delay times between the lasers, a movie of the reaction at the atomic level is generated with sufficient time resolution, less than 0.0000000000001 seconds, to see geometries changing, bonds breaking and new bonds forming.

Loomis is also using sophisticated laser pulse-shaping methods and implementing quantum mechanics to control the fate of reactions.

Starting with a single ultrashort laser pulse, a computational genetic learning algorithm is used to generate a very complicated pulse sequence that focuses the molecules at desired orientations and energies at a specific time. Such an algorithm derives its behavior from a metaphor of evolution processes in nature.

The learning algorithm can be told to enhance the yield of a chemical reaction or to enhance one reaction product over other, undesired reaction products.

"Imagine hitting a key on your computer keyboard and getting one reaction product," Loomis said. "Then hit a different key and get a different product without changing anything else."

He and graduate student David Boucher are already able to control the vibrational motion within small molecules, and they have begun controlling the dissociation of specific bonds within molecules.

"Several research groups have recently gotten to this ability level, but now begins the fun stuff — controlling reactions between molecules," Loomis said. "These experiments are the ones that will enable us to learn about chemistry and bimolecular reaction pathways."

The use of lasers to dictate chemistry could actually create entirely new possibilities in chemistry.

For instance, it may be possible in the future to simply shine a powerful light with the right properties at just the right time on a bulk mixture of reactants to increase the efficiency of expensive reaction schemes. This could be especially important for industrial chemical production, where an increase in a reaction yield of just a few percent could mean millions of dollars in profit.

Lofty goals, such as improving air quality by blocking the formation of halogen waste products that are formed in combustion and industrial processes, also may be in reach.

Loomis' research directions are not limited to molecular reactions. In collaboration with the research group of William E. Buhro, Ph.D., professor of chemistry, Loomis plans to use his ultrafast pump-probe techniques to look at the motions of electrons along semiconductor nanowires and nanostructures.

"There is a large investment from the federal government and industry to develop semiconductor nanotechnololgy so that devices with faster and more efficient electronic properties can be developed," Loomis said. "However, right now scientists are still in the early stages of understanding how positive and negative charges behave in these small systems, where quantum mechanics dictates the energetics and relaxation processes of the charges."

Loomis plans on using single molecule spectroscopy to image a single semiconductor nanostructure, synthesized in Buhro's laboratory. By using two different ultrashort lasers that can be delayed in time from each other, they will excite an electron in the semiconductor and then watch it propagate along the structure using the second laser to image different spatial regions.

Again, Loomis will make real-time movies of how the charges, and thus current, travel in the semiconductor device.

"It is our goal to test and characterize the applicability of these unique semiconductor structures for use in electronics," he said.

Another exciting impact area in which Loomis is striving to make grand contributions is quantum computing.

Here, Loomis wants to use the learning algorithm and the carefully tailored laser pulse sequences to quantum-mechanically encode information into molecules and materials. He would use the second laser to extract the encoded information from the system at a later time.

This aspect of Loomis' research may make significant impacts on the future of computer design as well as the teleportation or encoded communication of information through space.

MARY BUTKUS

Bargain hunters **Teresa Schneider (left), administrative assistant, and Lucy Hubert, office manager, both in the Department of Mathematics in Arts & Sciences, browse through posters during the Campus Store's "Bargains on Bowles" sale May 2 in Mallinckrodt Student Center. The sale, which was very well attended, featured discounts of 25 percent to 90 percent on many items, including logo merchandise, books, clothing, gifts and compact discs.**

Smoking

Genetic factors correlate with withdrawal symptoms
– from Page 1

studied twins to evaluate three factors that could influence addiction: genetics, shared environmental factors and unique environmental factors.

The data came from the Vietnam Era Twin Registry, a national pool of physical and behavioral information drawn from 4,000 pairs of male twins — identical, fraternal and singletons (a twin whose co-twin could not be reached for questioning) — who served in the military between 1965-1975.

Information about cigarette consumption was obtained from follow-up telephone interviews that included questions about smoking habits. The researchers measured the contribution of genetic factors by comparing sets of identical twins, who share exactly the same genes, to fraternal twins, who are no more genetically similar than other siblings.

Shared environmental factors address experiences shared by twin siblings — being raised by the same parents, living in the same neighborhood, going to the same school — that might influence both identical and fraternal twins. By the process of elimination, unique environmental factors, or non-shared experiences, account for any remaining influences.

Xian and his colleagues studied more than 1,800 pairs of twins who were lifetime smokers and both twin siblings had attempted to quit at least once. The twins were asked whether they had ever experienced any of 12 symptoms of nicotine withdrawal, ranging from restlessness and anxiety to headache and nausea.

Using statistical analysis, the researchers then calculated the odds of a failed attempt to quit smoking based on individual symptoms. Then they computed a single variable that captured both the overall severity of nicotine withdrawal and number of symptoms, and they used that variable to create a model evaluating the association between nicotine withdrawal symptoms and failure in attempts to quit smoking.

By comparing the groups of identical versus fraternal twins, the researchers were able to formulate conclusions about the degree to which genes contributed to the results.

Somewhat surprisingly, results were statistically equivalent whether shared environmental factors were included or not. The researchers determined that shared environmental factors did not significantly contribute to either failed attempts to quit smoking or to nicotine withdrawal, so they eliminated them from their final results.

But unique environmental factors seemed very important in determining a person's odds of quitting.

For example, a person whose friends are smokers might have a more difficult time than a person whose friends don't smoke.

On the other hand, someone with a close friend or family member who recently suffered from a smoking-related illness such as lung cancer might have an extra incentive to stop smoking.

"Just because genes influence failed smoking cessation and nicotine withdrawal, it doesn't mean that we can't influence our own choices," Xian said. "People still have free will and still can stop smoking, even if their genetic makeup might make it very difficult."

But genetic factors correlate strongly with symptoms of withdrawal, and the various symptoms that smokers develop when they attempt to quit go a long way toward determining whether their attempt will be successful.

Xian said recently developed drugs help many people quit by alleviating some of the discomfort that smokers experience during withdrawal. But he believes that as the genetic picture becomes clearer, it may be possible to target the genes associated with nicotine withdrawal and match drug therapies to individual smokers trying to quit.

Gravity

Branch of astronomy born just last year
– from Page 1

Gravitational waves are produced by the coherent bulk motion of matter, traveling nearly unscathed through space and time, and carrying the information of the strong field space-time regions where they originated, be it the birth of a black hole or the universe as a whole.

This branch of astronomy was born in 2002. The Laser Interferometer Gravitational Wave Observatory (LIGO) at Livingston, La., was on air for the first time in March of that year.

LIGO, together with its European counterparts, VIRGO and GEO600, and the outer-space gravitational wave observatories LISA and LAGOS, will open in the next few years a completely new window to the universe.

Supercomputer runs Einsteinian equation

Suen and his collaborators are using supercomputing power from the National Center for Supercomputing Applications at the University of Illinois to do numerical simulations of Einstein's equations to simulate what happens when, say, a neutron star plunges into a black hole.

From these simulations, they get waveform templates. The templates can be superimposed on actual gravity wave signals to see if the signal has coincidences with the waveform.

"When we get a signal, we want to know what is generating that signal," Suen said. "To determine that, we do a numerical simulation of a system, perhaps a neutron star collapsing, in a certain configuration, get the waveform and compare it to what we observe.

"If it's not a match, we change the configuration a little bit, do the comparison again and repeat the process until we can identify which configuration is responsible for the signal that we observe."

Suen said that intrigue about gravity waves is sky-high in the astronomy community.

"Think of it: Gravity waves come to us from the edge of the universe, from the beginning of time, unchanged," he said. "They carry completely different information than electromagnetic waves.

"Perhaps the most exciting thing about them is that we may well not know what it is we're going to observe. We think black holes, for sure. But who knows what else we might find?"

Record

Washington University community news

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Associate Editor Andy Clendennen
Assistant Editor Neil Schoenherr
Associate Vice Chancellor Judith Jasper Leicht
Executive Editor Susan Killenberg McGinn
Medical News Editor Kimberly Leydig
Production Carl Jacobs

News & Comments
(314) 935-6603
Campus Box 1070
kevin_kiley@aismail.wustl.edu

Medical News
(314) 286-0119
Campus Box 8508
leydigk@msnotes.wustl.edu

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Employees Office of Human Resources, Washington University, Campus Box 1184, One Brookings Drive, St. Louis, MO 63130.

Washington University in St. Louis

Notables

Arts & Sciences
Distinguished Alumni Awards to be presented

Arts & Sciences will recognize the achievements of five of its alumni at 4 p.m. May 16 in the Arts & Sciences Laboratory Science Building.

Edward S. Macias, Ph.D., executive vice chancellor and dean of Arts & Sciences, will present Distinguished Alumni Awards to five Arts & Sciences alumni who have attained distinction in their academic or professional careers and have demonstrated service to their communities and to the University.

Being honored are: William E. Cornelius, M.A. '83; Dennis C. Dickerson Sr., M.A. '74, Ph.D. '78; Mark J. Ginsburg, A.B. '73, house staff '81; Mark E. Mason, A.B. '51; and Susan Ekberg Stiritz, M.A. '68, Ph.D. '01.

When **Cornelius** learned that University College was starting a master's degree program in liberal arts, he was president of Union Electric Co. (now Ameren Corp.) and deeply involved in the St. Louis community. Finding the new opportunity irresistible, Cornelius was in the program's first graduating class, writing a thesis on nuclear weapons. He taught an evening course on the subject for several years.

Cornelius, who joined Union Electric in 1962, retired in 1994 and is now an Ameren board member. A University emeritus trustee, Cornelius, with his wife, Ginger, supports scholarships in Arts & Sciences and the George Warren Brown School of Social Work.

Dickerson, a social historian, is a professor of history and member of the Graduate Department of Religion at Vanderbilt University. He joined Vanderbilt's faculty in 1999 after nearly 23 years at Williams College, where he held an endowed chair in history and was department chair.

His myriad scholarly publications include three books and other writings on civil rights, medical history, labor, and African-American leadership and religious history.

President-elect of the American Society of Church History, Dickerson is an ordained minister and historiographer of the 2.5 million-member African Methodist Episcopal Church. Dickerson supports Arts & Sciences and Olin Library at Washington University.

Ginsburg's rheumatology practice, from which he recently retired, was the largest of its kind in the Southeast. He is chief executive officer of ESRD Laboratories in Fort Lauderdale, Fla., which performs blood tests for 18,000 people on dialysis throughout the country. He also heads Statewide Laboratory Services, which does all the lab work for Florida's 2.5 million Medicaid patients.

He chairs Arts & Sciences' Gold Coast Regional Cabinet and serves on the Arts & Sciences National Council, the Alumni and Parents Admission Program and the Regional Campaign Committee. A longtime supporter of the Arts & Sciences scholarship program, he has also pledged a named professorship in Arts & Sciences.

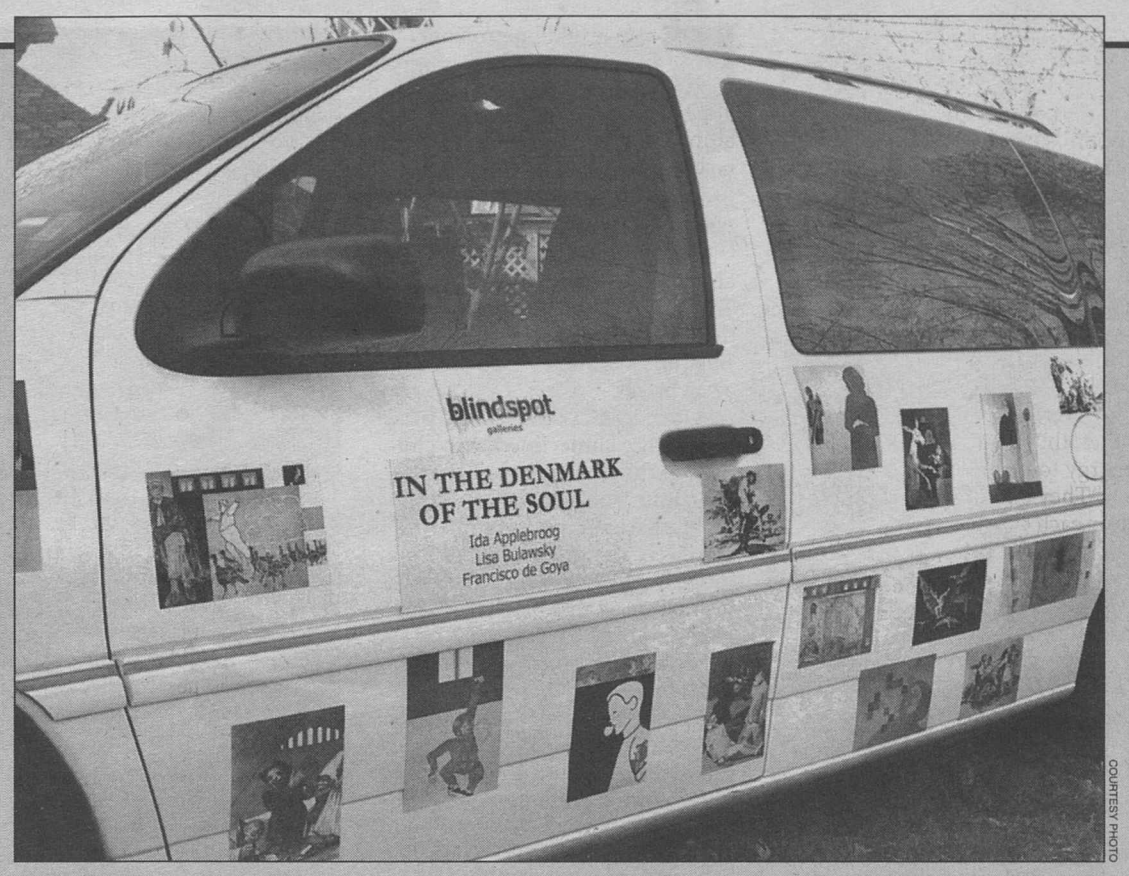
Mason is vice chairman of Oxford Development Co., one of the largest private developers in western Pennsylvania.

He has served as a University trustee, chairman of the Alumni Board of Governors, member of the Arts & Sciences Campaign Leadership Committee, and co-chair of his 2001 reunion. He is a member of the Arts & Sciences National Council and recipient of the University's Distinguished Alumni Award.

Mason and his wife, Myrna, have been generous supporters of the University. In recognition of their support, classrooms in both Ridgley and Simon halls and a renovated conference room in Eads Hall bear their names.

When **Stiritz** returned to doctoral course work begun earlier and enrolled in the Women's Studies Program at the University, she was struck by the impact of the discipline, which examines the difference gender makes to knowledge and social practice, on the students. Her gift of $1 million endowed the Susan E. and William P. Stiritz Distinguished Professorship in Women's Studies in Arts & Sciences.

Stiritz teaches two Women and Gender Studies courses in Arts & Sciences and conducts literary research. She will present three papers (one a prize winner) at the June meeting of the American Psychoanalytic Association.



COURTESY PHOTO

(Art) Working on the highway Lisa Bulawsky, assistant professor of printmaking in the School of Art, has brought whole new meaning to the phrase "traveling exhibition" with Blindspot Galleries. Launched last winter, this "alternative" exhibition space consists of a white Ford minivan and dozens of small artworks — printed on thin strips of magnet-backed vinyl — that are free for the taking. "As the automobile travels, the art is dispersed into society through visual exposure and the transient quality of the magnets," explained Bulawsky, who once printed woodcuts with a Bi-State bus. "'Elitist art viewers' are no longer the only group that can access the work."

Campus Authors

R. Keith Sawyer, Ph.D., assistant professor of education in Arts & Sciences

Group Creativity: Music, Theater, Collaboration

(Lawrence Erlbaum Associates Inc., 2003)

A jazz quartet. The cast of a stage play. A work team, a classroom discussion seminar, or a family planning a summer vacation.

In all of these groups, creativity and collaboration are essential. And perhaps the most creative collaborating groups are music and theater ensembles.

Group Creativity: Music, Theater, Collaboration draws on studies of performing ensembles to provide insights into all group creativity.

Sawyer

In collaborating groups, the group becomes more than the sum of its parts, as creativity emerges from a dynamic exchange between the participants. R. Keith Sawyer, Ph.D., assistant professor of education in Arts & Sciences, takes a novel approach, focusing on the symbolic interactional process of collaborative communication.

Group Creativity analyzes how each action functions in the ongoing flow of the performance, and how it relates to the context that emerges during the performance. The author explores participants' close listening and sensitivity, the submerging of each ego in the group dynamic, and the ways that people work together to create something better than any single person could create alone.

Group Creativity is essential reading for anyone interested in collaboration and creativity.

— *From keithsawyer.com*

Sawyer, who has been studying group creativity in jazz and theater settings for more than 10 years, wrote this book because he began to realize that jazz and theater have lessons to teach all of us about everyday collaboration and creativity.

"For example, I give some very specific advice for how businesses can make more creative workteams and how teachers can use student groups to enhance learning," Sawyer said.

Although we all realize the importance of group creativity in our lives, scientists have only recently begun to closely study it.

"There are a couple of exciting recent books about creative collaboration, but those focus on pairs of people that work together over long periods of time, like T.S. Eliot and Ezra Pound, or Picasso and Braque," he said.

"This is the first book that uses creative performance to teach us about group creativity in general."

Sawyer has written several other books on this subject, including *Improvised Dialogues: Emergence and Creativity in Conversation*; *Creating Conversations: Improvisation in Everyday Discourse*; *Creativity in Performance*; and *Pretend Play as Improvisation: Conversation in the Preschool Classroom.*

— *Neil Schoenherr*

Campus Watch

The following incidents were reported to University Police **April 30-May 6**. Readers with information that could assist in investigating these incidents are urged to call 935-5555. This information is provided as a public service to promote safety awareness and is available on the University Police Web site at police.wustl.edu.

April 30

1:02 p.m. — A student reported an unknown person stole his mountain bike from either Wheeler Residence Hall or the west entrance of Givens Hall. Total loss is estimated at $100.

3:04 p.m. — A student reported that she either lost her cell phone or had it stolen by an unknown person somewhere between Danforth Residence Hall and the Athletic Complex. Total loss is estimated at $300.

May 1

9:24 a.m. — A University employee reported that an unknown person stole a halogen floor lamp and a picture from the southwest wall of the Nemerov Residence Hall lower lobby area. Total loss is estimated at $175.

May 3

1:13 a.m. — An unknown person lit a couch on fire at the base of the stairs in front of Brookings Hall.

Additionally, University Police responded to five reports of larceny, two auto accidents, two reports of lost or stolen articles and one report each of trespassing and property damage.

Spector Prize shared by Anderson, Simpson

BY TONY FITZPATRICK

Danica Anderson and Cory Simpson are sharing the 2003 Spector Prize, an annual award bestowed by the Department of Biology in Arts & Sciences.

The Spector Prize began in 1974 to recognize academic excellence and outstanding undergraduate achievement and research. It was named in memory of Marion Smith Spector, a 1938 alumna who studied zoology under the famed biologist Viktor Hamburger.

Anderson's and Simpson's theses were judged to be the most outstanding among eight nominated for the prize.

Anderson's thesis is called "Conserving the Sacred Medicine Mountains: A GIS Vegetation Analysis of Tibetan Sacred Sites in Northwest Yunnan." Simpson's is "Using a P-element Transposon to Investigate DNA Packaging Domains of the Fourth Chromosome in *Drosophila Melanogaster*."

As part of the departmental recognition of their work, the two presented research talks at a special biology department seminar.

Anderson worked with Jan Salick at the Missouri Botanical Garden. Anderson's study will soon be submitted for publication in one of the prominent ethnobotany journals.

She plans to apply to graduate school and study ethnobotany and forest ecology. She anticipates a career in academic research and looks forward to teaching.

Simpson worked with Sarah C.R. Elgin, Ph.D., professor of biology. He will be a co-author on a paper that will be submitted to a top molecular biology journal.

Simpson has applied to M.D./Ph.D. and M.D. programs. He hopes to continue to work in research, hopefully as an academic physician-scientist.

Washington People

An encompassing view of the world

Pediatrician Joan C. Downey's rich experiences inspire students and physicians

BY KIMBERLY LEYDIG

From a small petroleum camp nestled deep in the Amazon jungle, young Joan C. Downey and her family traveled up the windy Magdalena River to receive immunization shots at a nearby village.

The Colombian village was about an hour by canoe from the Texaco base where her father produced oil. The nearest city — Bogotà, Colombia — was 24 hours away by car.

Downey still recalls the corridors of the clinic, lined with children at different stages of starvation, injury and death.

"Just seeing these children — who were my size and age — made it very clear to me that I wanted to be a pediatrician," says Downey, M.D. "I knew that I needed to do something to make a difference."

The desire to make a difference in a child's life began years ago at that destitute clinic. But Downey was drawn to neonatology during postgraduate work at a hospital in Bogotà.

In the pediatric intensive-care unit, she often ventilated babies by hand to keep them alive through the night. "We were the equipment," she says.

Intensive care is so exceptionally good in the United States, Downey explains, that you can make an immediate difference in the life or death of a newborn.

"I love the whole arena of a new life, which can also be a new death," she says. "The whole arena, which usually brings out the best but sometimes the worst in people, has always fascinated me."

BOB BOSTON

Joan Downey, M.D. (right), assistant professor of pediatrics, and nurse Judy Compton care for Jayla Gibbs, who was born weighing just 14 ounces but now weighs 4 pounds, in the neonatal intensive care unit at St. Louis Children's Hospital.

Downey is now an assistant professor of pediatrics, director of the Labor and Delivery Service at Barnes-Jewish Hospital and director of the Antenatal Consult Service at St. Louis Children's Hospital, which cares for women with pregnancies involving abnormal fetuses. In these roles, she has the opportunity to positively affect a child's life every day.

"She is scrupulously attentive to the details of care for critically ill newborns and their families," says F. Sessions Cole, M.D., the Park J. White M.D. Professor of Pediatrics and head of the neonatal intensive care unit at Children's Hospital. "She is also adept at anticipating the needs of families and addressing them in a proactive fashion, a strategy that significantly reduces their stress.

"She is passionate about ensuring that all babies and their families have the best possible care."

That combination of empathy and insight are what makes Downey an excellent fit for pediatrics.

"You have to be connected to your patients — it doesn't require a M.D. or Ph.D. to figure that out," she explains. "If you don't give your patients and their families a piece of your heart, they can see right through you."

COURTESY PHOTO

(Front, from left) Brett, Jaelithe and Whitt; (back) Joan Downey and Skip Virgin enjoy Parrot Jungle during a vacation in Miami.

Family matters

Even as a small child, Downey's mother, Graciela Chaves de Downey, stressed to her daughter the importance of helping others. Every year, Graciela organized charity missions that delivered desperately needed food, clothing and supplies to the impoverished villages along the Magdalena River.

Poverty was an anathema that Downey's father knew all too well. Growing up in the 1920s as an Irish immigrant in the ghettos of Hell's Kitchen in New York City with only an elementary-school education, John Downey knew there were few opportunities to escape ghetto life.

The day after his mother died, he boarded a barge with 30 other American men and headed to Colombia to "make his fortune." Not long after he arrived at the petroleum camp, John fell in love and married Graciela.

Seventeen years later, Texaco transferred the Downeys to Miami. As a high-school student, Joan Downey worked in a city hospital from 4 p.m. to midnight, moving up the ranks from escort to finance clerk in an effort to understand all the occupations that make the medical enterprise work.

But medicine wasn't the only thing that sparked Downey's interest. A young man from a sailing family named Herbert W. "Skip" Virgin caught her eye at a National Honor Society induction ceremony when, as president, he placed the society's pin on her.

The following summer the couple met again at a Bohemian restaurant. With a calypso band playing in the background, they had a fantastic conversation about *E. coli*.

"I realized then that this could really be something great," she recalls.

Virgin, M.D., Ph.D., professor of pathology and immunology and of molecular microbiology, delayed his applications to M.D./Ph.D. programs and worked in a lab for a year so he and Downey could apply to medical school together. A year later, both were admitted to Harvard Medical School.

After a year at Harvard, the couple married and took 18 members of Downey's extended family on a monthlong Colombian honeymoon. While they traveled, the couple was escorted by 40 armed guards to protect them from kidnappings and drug-related violence.

> **"Joan is an incredible mentor because she's a good listener, and she has a unique, encompassing view of the world. I wouldn't describe many people as wise, but I think that word suits Joan well."**
>
> AMY MCBEE

The first night of their honeymoon, marching soldiers and passing tanks awoke her husband in the middle of the night.

"I thought I was witnessing a coup attempt," Virgin says, "but it was a practice parade — an unusual reason for not sleeping during your honeymoon!"

"Skipper is very 'gringo,'" Downey adds, laughing.

While her new husband finished his Ph.D. training, Downey pursued a master's degree at Harvard's School of Public Health and spent a year working on related projects.

In addition to working at the pediatric hospital in Bogotà, Downey went to Cali, Colombia, and Santiago, Chile, to work with a mobile surgery team, (as the only female) performing trauma surgeries in mobile army surgical hospital tents.

She also lived in a trailer across from the Indian Health Service while she worked at a 30-bed hospital on the Zuni Reservation near Gallop, N.M.

After Virgin finished his Ph.D., the couple was back "in sync" and accepted positions at the School of Medicine in 1990, partly because "the University is very welcoming to husband-and-wife teams," Downey says.

A great role model

At Harvard, Downey and Virgin were very involved with advising undergraduate students about careers in medicine and science and even lived above them in university housing as head resident tutors.

Those experiences primed Downey for her current position as assistant dean and coordinator of undergraduate research programs in the College of Arts & Sciences.

"Helping students as they mature in their careers is such a rich experience," Downey says. "I love passing the torch."

James E. McLeod, vice chancellor for students and dean of the College of Arts & Sciences, explains that Downey's unique set of life experiences make her an ideal student adviser.

"Not only is Joan very caring, but she's also accomplished a lot of different things, which is very inspiring for young people to see," McLeod says.

One of Downey's more recent accomplishments was serving as the 2001 president of the Academic Women's Network, which promotes interactions among female faculty and assists junior faculty and trainees. In 2002, the group received the Women in Medicine Leadership Development Award from the Association of American Medical Colleges.

And junior faculty and students are the ones who truly benefit from Downey's wisdom and guidance.

"Joan is an incredible mentor because she's a good listener, and she has a unique, encompassing view of the world," says former medical student Amy McBee, M.D., who met Downey during her pediatric clerkship. "I wouldn't describe many people as wise, but I think that word suits Joan well."

Downey recently spent hours advising McBee on the career and lifestyle issues surrounding the neonatology fellowship McBee just accepted at Children's Hospital.

McBee sought advice in the right person — Downey juggles career and family with grace and ease.

The focus on family is deeply rooted in Downey's Latin American heritage and was stressed to her growing up both in the United States and South America.

"St. Louis is a fabulous place for us to live because Midwestern values prioritize the family, which is consistent with Latin values," she says. "We all work hard for our achievements but never at the expense of family."

Joan C. Downey, M.D.

Native language: Spanish

Husband: Herbert W. "Skip" Virgin, M.D., Ph.D., professor of pathology and immunology and of molecular microbiology

Years married: 23; they've been together for 28

Children: Whitt, 13; Brett, 10; Jaelithe, 5. "Our children need to be No. 1 — we limit our commitments if it doesn't include them."

Favorite pastimes: Sailing, reading historical novels and going to Miami to meet extended family members, who travel annually from Bogotà for reunions